suitable for fusion of living matter in the (bio)degraded scaffold.

Cont A1

6. (amended) Microcellular polyhipe polymer scaffold as claimed in Claim 1 comprising in individual zones, pore and interconnect sizes in different ranges, suitable for co-culturing two or more types of living matter.

7. (amended) Microcellular polyhipe polymer scaffold as claimed in Claim 1 wherein ratio of interconnect to pore diameter is in the range $0 < d/D < 0.5$, preferably in the range $0.1 < d/D < 0.5$ when the pore diameter is approximately less than 200 micron

A2

9. (amended) Microcellular polyhipe polymer scaffold as claimed in Claim 7 wherein the interface between a microcapillary wall and the bulk polymer provides a thin surface layer of the order of 0.5-5 micron, forming a zone particularly suited for directional (anisotropic) growth of living matter.

10. (amended) Microcellular polyhipe polymer scaffold as claimed in Claim 9 wherein the interface has smaller pore size than the bulk polymer wherein the zone is suitable for growth of cells forming a lining, for example cells lining the blood vessels or for growing endothelial cells on the interface surface.

11. (amended) Microcellular polyhipe polymer scaffold as claimed in Claim 1 comprising a module of shell and tube type or cubic/polyhedric type with respect to direction and/or configuration of channels and/or microcapillaries.

12. (amended) Microcellular polyhipe polymer scaffold as claimed in Claim 1 comprising a surface coating, using coating materials

introduced in situ during polymerisation or post polymerisation

Cont A2

13. (amended) Microcellular polyhipe polymer scaffold as claimed in Claim 1 wherein polymer is selected from proteins and cellulose, polyacrylamide, polyvinyl in rigid or flexible form, poly(lactic acid), poly(glycolic acid), polycaprolactone, poly (lactide/glycolide) and polyacrylimide.

14. (amended) Microcellular polyhipe polymer scaffold as claimed in Claim 1 wherein polymer comprises resiliently deformable or elastic material or is rendered resiliently deformable or elastic and is suitable for repeated stress and relaxation by means of oscillatory straining of the scaffold during cell growth facilitating rate of cell growth.

15. (amended) Microcellular polyhipe polymer scaffold as claimed in Claim 1 wherein polyhipe scaffold is electrically conductive or is rendered electrically conductive whereby it is suitable for conducting an electric current during cell growth, facilitating distinguishing certain cell types and promoting growth and fusion of particular cell types

A3

18. (amended) Process as claimed in Claim 16 comprising co-extrusion of polyhipe emulsions of differing pore and interconnect sizes eg concentrically or side-by-side.

19. (amended) Process as claimed in Claim 16 wherein the emulsion comprises aqueous and non-aqueous phases, preferably aqueous and oil.

20. (amended) A biologically active system comprising a polyhipe scaffold as defined in Claim 1 and living matter providing normal

cell functioning associated with a natural biologically active system present in the human or animal body, wherein living matter is selected from microorganisms or multiple cells selected from human, animal and plant cells, preferably selected from isotropic tissue and bone cells present in cartillage, cornea, marrow and the like, anisotropic cells such as nerve, muscle, blood vessel cells, of cell type selected from fibroblasts, chrondocytes, osteoblasts, bone marrow cells, hepatocytes, cardiomycytes neurons, myoblasts, macrophages and microvascular endothelium cells.

21. (amended) Method for growth of multiple cells in a polyhipe scaffold as hereinbefore defined in Claim 1 comprising providing cells on or in the scaffold in a controlled environment and providing a suitable nutrient adapted for growth and providing conditions for growth promotion and positional control.

23. (amended) An organ support module comprising a cubic or polyhedric module of closely interwoven but not interconnecting channels immersed in a polyhipe scaffold as defined in Claim 3 suited for growth of specific organ cells in the polyhipe and/or the channels, wherein cells are optionally in contact with a specific microchannel and all cells are capable of intercell communication.

25. (amended) The use of a polyhipe scaffold, a biologically active system, or organ support module as defined in Claim 1 for the manufacture of contact lenses, dental fillings, cochlea implants, vascular supports including heart valves and cardiac pace makers and drug delivery skin patches.